COURSE NUMBER: FHWA-NHI-130053
COURSE TITLE: Bridge Inspection Refresher Training

UPDATED COURSE

The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper rating practices; and review the professional obligations of bridge inspectors.

This course is based on the "Bridge Inspector's Reference Manual," 2002 with reference to the "AASHTO Manual for the Condition Evaluation of Bridges," 2000, with interims, the "FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges," 1995, including 2003/2004 eratta sheet, and the "AASHTO Guide for CoRe (Commonly Recognized) Structural Elements," 1998, with interims.

Core course topics include tri-axial constraints, inspector qualifications and duties, record keeping and documentation, structure inventory and appraisal overview, national bridge inventory standard component ratings, element level ratings, safety, component case studies for decks, superstructures, substructures, and channels, and a virtual bridge inspection classroom exercise.

Optional topics include bridge mechanics, superstructure type identification, inspection techniques, fatigue and fracture in steel bridges, traffic safety features, bridge site signing, and culverts.

Host agencies desiring additional information on selection of optional topics and options for addressing NBI rating methods and element level data collection should contact Eric Mann of Michael Baker Corporation at (412) 269-7932.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Perform bridge safety inspection, component or element level condition ratings, functional appraisal, and data collection in a uniform manner consistent with NBIS and agency requirements
- Apply current inspection techniques
- Evaluate channel scour as applied to waterway ratings
- Collect field data with appropriate precision

TARGET AUDIENCE:

Federal, State, and local agencies and private-sector personnel employed in inspecting bridges or managing bridge inspection programs. Participants must have completed prior comprehensive bridge inspection training, or meet the criteria for a bridge inspector under the State's procedures or requirements.

FEE: $400 Per Participant

LENGTH: 3.0 Days (CEU: 1.8 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Thomas Everett • (202) 366-4675 • thomas.everett@fhwa.dot.gov

Would you like more information about the Universities and Grants Programs? Go to page 178 in the catalog.

COURSE NUMBER: FHWA-NHI-130054
COURSE TITLE: Engineering Concepts for Bridge Inspectors

This course provides knowledge of the elementary concepts in bridge engineering that are needed by bridge inspectors. Materials, material properties, bridge components and details, loadings, stresses and strains, and deterioration of bridge materials and members are covered. The course concludes with an examination reviewing key elements of bridge engineering.

This course prepares technicians and other personnel who have a limited knowledge of bridge engineering for a more intensive course in bridge inspection, such as the 2-week course FHWA-NHI-130055 Safety Inspection of In-Service Bridges.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Identify common bridge types, recognize and name the typical major components and members of a highway bridge, and also the members and features unique to bridges such as trusses, arches, cable-stayed and suspension spans
- Name the common materials used in bridges and describe the basic properties, strengths, and weaknesses of each
- Discuss the basic concepts of elasticity of materials, response of materials and structural members to a variety of loadings, and the relationship between stresses and strains
- Describe the various types of deterioration of the common structural materials that result from weathering, loading, etc.
- Recognize the more common signs of material distress such as steel corrosion and cracking and concrete cracking, spalling and scaling
- Name the secondary elements and features of bridges such as joints, railings, scuppers, etc., and describe the proper role of each in the performance of a bridge
- Demonstrate knowledge of bridges, bridge components, material properties, and mechanics of materials to prepare to take a comprehensive course on bridge inspection

TARGET AUDIENCE:

Federal, State, and local technicians, inspectors, and engineers with basic experience relating to highway bridges. Individuals completing this course could serve on a bridge inspection team, but would require additional experience and training to qualify as team leaders.

FEE: $650 Per Participant

LENGTH: 5.0 Days (CEU: 3.0 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Thomas Everett • (202) 366-4675 • thomas.everett@fhwa.dot.gov

See page 6 in the front of the catalog for course registration information and page 9 for a coordination checklist.

COURSE NUMBER: FHWA-NHI-130055
COURSE TITLE: Safety Inspection of In-Service Bridges

This course is based on the "Bridge Inspector's Reference Manual" and provides training on the safety inspection of in-service highway bridges. Satisfactory completion of this course will fulfill the training requirements of the national Bridge Inspection Standards (NBIS) for a comprehensive training course.

Mid-term and final examinations based on course content will be administered to participants. The sponsoring agency/State may monitor the examinations and retain the scores to qualify or certify bridge inspectors. The sponsoring agency is responsible for grading the examinations. An answer key will be provided.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Evaluate a variety of bridges and determine the critical areas for inspection, including fatigue-prone details, and common points of deterioration and/or distress
- Review as-built plans and previous inspection reports and, based on this review, plan and conduct an effective safety inspection for common bridge types and bridge-length culverts
- Provide documentation of defects in various materials and of bridge configurations
- Recognize the need to inspect the underwater portions of bridge structures, describe the types of deficiencies to look for (e.g., scour), determine when an inspection is necessary, and identify the procedures and types of equipment available and the advantages and limitations of each
- Evaluate the severity of material deterioration and member distress and assign ratings according to coding guidance as developed by FHWA and/or the State highway agency.
- Determine when it is necessary to close the bridge (or recommend closure) because of imminent danger
- Discuss the equipment requirements for a complete inspection and demonstrate proficiency
- Recognize when further inspection, such as nondestructive testing (NDT), is required beyond the usual visual and hand tool inspection and decide what type of further inspection should be conducted

TARGET AUDIENCE:

Federal, State, and local highway agency employees involved in inspecting bridges or in charge of a bridge inspection unit. A background in bridge engineering or completion of NHI course FHWA-NHI-130054 Engineering Concepts for Bridge Inspectors is strongly recommended.

FEE: $1,400 Per Participant

LENGTH: 10.0 Days (CEU: 6.0 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Thomas Everett • (202) 366-4675 • thomas.everett@fhwa.dot.gov

If you're interested in this course, you may also want to take advantage of other NHI structures courses.

132012 Soil and Foundations Workshop – Geotechnical and Materials
132014 Drilled Shafts
132021 Driven Pile Foundations – Design and Construction
132040 Geotechnical Aspects of Pavements – Geotechnical and Materials
132042 Design of MSEW and RSS
132078 Micropile Design and Construction

COURSE NUMBER: FHWA-NHI-130060
COURSE TITLE: Vessel Collision Design of Highway Bridges

The AASHTO "Guide Specification and Commentary for Vessel Collision Design of Highway Bridges" was developed to enable bridge engineers to assess the risk of vessel collision with a bridge, calculate the costs of probable collisions with the bridge, develop plans to minimize the risk of collision, and develop designs to protect the bridge and its motorists in the event of a collision.

This 2-day training course provides bridge engineers with the background and overall approach of the design specification. Bridge engineers will be trained on the detailed application of those specifications through the use of a typical design situation. The course covers the following subjects:

1. Background and historical collisions
2. General provisions, including applicability of the specification, data collection, bridge importance classification, vessel types and characteristics, design vessel, design impact speed/vessel collision energy, collision force on piers and superstructures, ship and barge bow damage, depth and impact load combination and location of forces
3. Design vessel selection, including waterway/bridge/vessel characteristics, impact distribution, design loads, selection methods (semi-deterministic, risk analysis, and cost-effectiveness)
4. Substructure provisions
5. Concrete and steel design
6. Bridge protection design provisions and planning guidelines, including physical protection (fixed and moveable bridges) and motorist warning systems/aids-to-navigation

OUTCOMES:

Upon completion of the course, participants will be able to:

- Apply the AASHTO vessel collision specification to design bridge structures
- Determine ship and barge characteristics for vessels transiting a waterway
- Compute vessel impact forces and collision energies
- Determine the location of impact forces on bridge members
- Determine design impact loads using Method I (semi-deterministic) criteria, Method II (risk analysis) criteria and Method III (benefit/cost) criteria
- Describe alternative pier protection systems for bridge structures
- Apply vessel collision planning guidelines for the development of new bridges

TARGET AUDIENCE:

Federal, State, and local highway bridge design engineers and bridge managers who are responsible for the construction of bridges over marine or inland waterways navigable by large commercial vessels. It will also be of interest to other parties who are responsible for the management of inland waterway, port, and navigation facilities or for the operation of merchant vessels.

FEE: $270 Per Participant

LENGTH: 2.0 Days (CEU: 1.2 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Benjamin Tang • (202) 366-4592 • benjamin.tang@fhwa.dot.gov

COURSE NUMBER: FHWA-NHI-130069
COURSE TITLE: Hazardous Bridge Coatings: Design and Management of Maintenance and Removal Operations

The focus of this training course is on the maintenance or removal of bridge paint systems that contain lead or other potentially toxic materials. In compliance with applicable regulations, the course offers a step-by-step method for the design, specification, and management of bridge painting projects.

The classroom presentation includes a combination of lectures and discussions, demonstrations of key methods and procedures, and workshops. In addition, each participant receives a field guide containing a detailed project design checklist, a model/template specification, a suggested contractor pre-qualification package, and a pre-bid meeting agenda, a submittal review checklist, as well as an environmental, health, and safety checklist.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Recognize the health hazards and legal risks associated with paint containing lead and the impacts on bridge painting programs
- Use coating assessment surveys to maximize the service life of individual coating systems and improve the cost-effectiveness of an overall bridge painting program
- Select appropriate combinations of removal methods and containment systems based upon the chosen painting strategy and the relative risks of the paint disturbance operation to workers, the public, and the environment
- Implement a monitoring program that adequately demonstrates that associated risks have been controlled
- Establish performance standards to protect workers, reduce long-term liabilities associated with hazardous wastes, and document successful clearance of project sites
- Prepare clear, well-organized, performance-based, project-specific specifications that establish objective goals for all areas of contract performance but leave the means and methods of construction to the contractor
- Use available tools to help pre-qualify contractors, conduct effective pre-bid meetings, review contractor submittals, and enforce project specifications

TARGET AUDIENCE:

Highway and transportation agency employees and private industry personnel who are responsible for development of contract specifications and procurement requirements for the removal and/or maintenance of bridge paint systems. Training is also applicable to managers who are responsible for procurement approval and for other personnel involved in such operations.

FEE: $530 Per Participant

LENGTH: 4.0 Days (CEU: 2.4 Units)

CLASS SIZE: Minimum: 20; Maximum: 28

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Robert Kogler • (202) 493-3080 • bob.kogler@fhwa.dot.gov

COURSE NUMBER: FHWA-NHI-130078
COURSE TITLE: Fracture Critical Inspection Techniques for Steel Bridges

The course curriculum reflects current practices and addresses new and emerging technologies available to bridge inspectors. In addition, the course includes exemplary training and hands-on workshops for popular types of nondestructive testing (NDT) equipment and a case study for the preparation of an inspection plan for a fracture critical bridge.

The first day of the course focuses on the concept of fracture critical members (FCMs), FCM identification, failure mechanics, and fatigue in metal. These fundamentals are followed by an overview of NDT methods. Day two provides demonstration sessions and hands-on applications of NDT techniques for dye penetrant, magnetic particle testing, Eddy current, and ultrasonic testing. Days three and four emphasize inspection procedures and reporting for common FCMs, including problematic details, I-girders, floor beams, trusses, box girders, pin and hanger assemblies, arch ties, eyebars, and cross girders/pier caps. A case study of the preparation of an inspection plan of a fracture critical bridge closes out the presentation. The course includes daily participant assignments. The schedule can be tailored to specific agency requirements.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Identify fracture critical bridges, fracture critical bridge members, and fatigue prone details
- Categorize contributing factors in the initiation and propagation of fatigue cracks
- Perform an intensive, indepth, and thorough fracture critical member inspection
- Identify various crack types and access their impact on the performance of the member
- Evaluate, select, and facilitate the use of available NDT methods
- Recommend a necessary course of action based on inspection findings

TARGET AUDIENCE:

Those benefiting most from this training will be public and private-sector bridge inspectors, supervisors, project engineers, maintenance engineers, shop inspectors, shop foreman, and others responsible for shop fabrication and field inspection of fracture critical steel bridge members. Participants should have completed NHI course FHWA-NHI-130054 Engineering Concepts for Bridge Inspectors and/or FHWA-NHI-130055 Safety Inspection of In-Service Bridges, or possess equivalent field experience relative to bridges to fully understand bridge mechanics and bridge safety inspection procedures as required by the National Bridge Inspection Standards.

FEE: $460 Per Participant

LENGTH: 3.5 Days (CEU: 2.1 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Thomas Everett • (202) 366-4675 • thomas.everett@fhwa.dot.gov

Look on the inside back cover for information about NHI's accreditation with the International Association for Continuing Education and Training (IACET).

COURSE NUMBER: FHWA-NHI-130079
COURSE TITLE: Bridge Coatings Inspection

This training course focuses on inspection of surface preparation and application of protective coating systems for bridge and highway structures, including navigation through the State's painting specification. The course provides a basic overview of the theory of corrosion and its control, the characteristics of various bridge coating types, as well as surface preparation and coating application techniques and equipment. Sessions on understanding coating specifications and diagnosing premature coating failures are also included.

The classroom presentation includes a combination of lectures and discussions, demonstrations of surface preparation, coating application and inspection equipment, and hands-on workshops.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Define the components of a corrosion cell and the methods in which protective coatings inhibit the corrosion process
- Describe the components of an industrial coating, the four basic curing mechanisms, and the advantages and limitations of protective coatings systems for bridge and highway structures
- Identify methods for surface preparation and describe the advantages and limitations of each
- Interpret SSPC and NACE surface preparation specifications
- Use coating manufacturers' product data sheets to ensure proper coating mixing, thinning, and application
- Identify methods of coating application and describe the advantages and limitations of each
- Describe the importance of quality assurance inspection of surface preparation and coating application operations on bridge structures
- Calibrate and use coatings inspection gauges and industry standards
- Describe the content of a pre-job conference
- Describe the basic format and content of a painting specification and identify the key items in the State's painting specification and/or special provisions
- Describe quality assurance documentation procedures
- Identify coating maintenance options and determine the overcoatability of an existing coating system
- Identify the causes of premature coating failures, methods of prevention, and resolution
- Recognize basic safety hazards associated with inspection of protective coatings
- Describe the basic controls used to help prevent environmental contamination during surface preparation and coating application operations

TARGET AUDIENCE:

Highway and transportation agency employees and private industry personnel who are responsible for the onsite inspection of protective coating systems during their installation by outside painting contractors or by State personnel. Training is also applicable to management and bridge inspection supervisory personnel.

FEE: $530 Per Participant

LENGTH: 4.0 Days (CEU: 2.4 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Bob Kogler • (202) 493-3080 • bob.kogler@fhwa.dot.gov

COURSE NUMBER:
FHWA-NHI-130081-Concrete (2-Day)
FHWA-NHI-130081A-Steel (2-Day)
FHWA-NHI-130081B-Concrete (2.5-Day)
FHWA-NHI-130081C-Steel (2.5-Day)
FHWA-NHI-130081D (4.5-Day)

NEW COURSE

COURSE TITLE: LRFD for Highway Bridge Superstructures

This new course expands the suite of FHWA services to assist State and local governments in a successful implementation of load and resistance factor design (LRFD). The course promotes the philosophy of the LRFD design platform and establishes the motivation for LRFD as the reassurance that safe design practice is being applied where it is needed. For structural applications, the curriculum follows the AASHTO "LRFD Bridge Design Specifications," 3rd Edition, 2004 (AASHTO LRFD), including the approved 2005 and 2006 Interims.

This course is a combination of instructor-led discussions and workshop exercises. It includes LRFD theory applied to design examples and illustrates step-by-step LRFD design procedures. The training includes the extensive use of student exercises and example problems to demonstrate overall design, detailing, and construction principles addressed in the reference materials, and afford hands-on experience in the AASHTO LRFD design and detailing of steel and concrete superstructures. Exercise and example problems are based on components of overall comprehensive bridge design examples using AASHTO LRFD and provide comparisons between ASD, LFD, and LRFD design methods where meaningful.

The curriculum materials are comprised of a comprehensive design manual, FHWA Publication No. 06-001 FHWA NHI XX-XXX, lecture and workshop exercises intended to promote or enhance a working knowledge of the AASHTO LRFD specification, and a participant workbook for lecture notes and exercises

The curriculum material contains the following major topics:

1. General superstructure design considerations
2. Preliminary design concepts for steel superstructures
3. Steel I-girder design (including miscellaneous steel detail design)
4. Preliminary design concepts for prestressed concrete superstructures
5. Pretensioned concrete I-girder design
6. Continuous pretensioned concrete I-girder design
7. Staged construction of prestressed concrete girder bridges
8. Bearing design

OUTCOMES:

Upon completion of the course, participants will be able to:

- Describe the bridge superstructure design and construction process in accordance with the current AASHTO LRFD specifications
- Identify the application of appropriate current AASHTO LRFD specification articles dealing with:
  - Selection of Bridge Type, Size, and Location
  - Bridge Economics
  - Evolution of Bridge Design Codes
  - Bridge Loads and Load Combinations
  - Structural Analysis
  - Deck Design
  - Concrete Bridge Superstructure Design
  - Steel Bridge Superstructure Design
  - Bearings Selection and Design
- Demonstrate the use of the current AASHTO LRFD specification requirements for superstructure design through the completion of step-by-step procedures, student exercises and design examples
- Successfully complete applicable Learning Outcome Assessments with a combined score of 70% or higher

TARGET AUDIENCE:

This course has been developed for the needs of practicing public and private sector structural engineers with 1-10 years of experience. The primary audience is Agency and consultant structural designers.

Pre-training Competencies
Individuals attending this course should have a minimum BSCE degree and completed the Web Based Training LRFD Primer, or a working knowledge of the current AASHTO LRFD or the AASHTO Standard Specifications for Highway Bridges; and relevant design experience using either of these specifications on at least one bridge superstructure.

FEE: $300 Per Participant (FHWA-NHI-130081)
LENGTH: 2.0 Days (CEU: 1.2 Units)

FEE: $300 Per Participant (FHWA-NHI-130081A)
LENGTH: 2.0 Days (CEU: 1.2 Units)

FEE: $375 Per Participant (FHWA-NHI-130081B)
LENGTH: 2.5 Days (CEU: 1.5 Units)

FEE: $375 Per Participant (FHWA-NHI-130081C)
LENGTH: 2.5 Days (CEU: 1.5 Units)

FEE: $675 Per Participant (FHWA-NHI-130081D)
LENGTH: 4.5 Days (CEU: 2.7 Units)
CLASS SIZE: Minimum: 20; Maximum: 40

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Firas Ibrahim • (202) 366-4598 • firas.ibrahim@fhwa.dot.gov

We want to hear from you about the NHI catalog. Please complete the catalog survey card in the back of the catalog.

COURSE NUMBER: FHWA-NHI-130082 (1-Day)
FHWA-NHI-130082A (3-Day)
FHWA-NHI-130082B (4-Day)
FHWA-NHI-130082C (5-Day)

NEW COURSE

COURSE TITLE: LRFD for Highway Bridge Substructures and Earth Retaining Structures

This new course expands the suite of FHWA services to assist State and local governments in a successful implementation of load and resistance factor design (LRFD). The course promotes the philosophy of the LRFD design platform and establishes the motivation for LRFD as the reassurance that safe design practice is being applied where it is needed. For structural applications, the curriculum follows the AASHTO "LRFD Bridge Design Specifications," 3rd Edition, 2004 (AASHTO LRFD). However for geotechnical applications, the curriculum follows recent development work on AASHTO LRFD Section 10, Foundations, including the approved 2006 interim specifications.

This course is a combination of instructor-led discussions and workshop exercises. It includes LRFD theory applied to design examples and illustrates step-by-step LRFD design procedures through a series of detailed process flowcharts. The training includes the extensive use of student exercises and example problems to demonstrate overall design, detailing, and construction principles addressed in the reference materials, and afford hands-on experience in the AASHTO LRFD design and detailing of bridge abutment and pier elements, deep and shallow foundation design, and earth retaining structures. Exercise and example problems are based on components of overall comprehensive bridge design examples using AASHTO LRFD and provide comparisons between ASD, LFD, and LRFD design methods where meaningful.

The curriculum materials are comprised of a comprehensive reference manual, FHWA Publication No. FHWA NHI 05-094, lecture and workshop exercises intended to promote or enhance a working knowledge of the AASHTO LRFD specification, and a participant workbook for lecture notes and exercises.

The curriculum material contains the following major topics:

1. Loads, load distribution, and load combinations
2. Principles of limit state designs
3. Geotechnical spread footing design (soil and rock)
4. Driven pile and drilled shaft design (soil and rock)
5. Substructure design and detailing for a cantilever abutment and hammerhead pier
6. Mechanically stabilized earth walls
7. Precast modular walls
8. Ground anchor wall design

The following course delivery options are available in order to suit the varying levels of participant experience within a given agency.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Define AASHTO LRFD limit states and compute structural and geotechnical design loads
- Apply AASHTO LRFD criteria for design
- Integrate the AASHTO LRFD specification provisions into the host agency's current practice
- Integrate the geotechnical aspects of LRFD foundation design into LRFD structural design
- Complete a comprehensive final exam and score at least 70 percent

This course can be taught in different course length formats. See our Web site to determine which course length best suits your training needs.

TARGET AUDIENCE:

The primary target audience for the seminar is mid-level bridge and geotechnical journeymen or mid-level design engineers with one to five years of experience responsible for the structural and/or geotechnical design of bridge substructures and earth retaining structures. The course can accommodate a blend of entry-level designers with college LRFD experience and experienced designers with load factor design (LFD) experience but minimal or no LRFD experience.

FEE: $250 Per Participant (FHWA-NHI-130082)
LENGTH: 1.0 Days (CEU: 0.6 Units)

FEE: $450 Per Participant (FHWA-NHI-130082A)
LENGTH: 3.0 Days (CEU: 1.8 Units)

FEE: $600 Per Participant (FHWA-NHI-130082B)
LENGTH: 4.0 Days (CEU: 2.4 Units)

FEE: $750 Per Participant (FHWA-NHI-130082C)
LENGTH: 5.0 Days (CEU: 3.0 Units)
CLASS SIZE: Minimum: 20; Maximum: 40

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Firas Ibrahim • (202) 366-4598 • firas.ibrahim@fhwa.dot.gov
Technical Information: Jerry DiMaggio • (202) 366-1569 • jerry.dimaggio@fhwa.dot.gov

If you're interested in this course, you may also want to take advantage of other NHI structures courses.

132012 Soil and Foundations Workshop – Geotechnical and Materials
132014 Drilled Shafts
132021 Driven Pile Foundations – Design and Construction
132040 Geotechnical Aspects of Pavements – Geotechnical and Materials
132042 Design of MSEW and RSS
132078 Micropile Design and Construction

COURSE NUMBER: FHWA-NHI-130087
COURSE TITLE: Inspection and Maintenance of Ancillary Highway Structures

This course provides training in the inspection and maintenance of ancillary structures, such as structural supports for highway signs, luminaries, and traffic signals. Its goal is to provide agencies with information to aid in establishing and conducting an inspection program in accordance with the FHWA "Guidelines for the Installation, Inspection, Maintenance, and Repair of Structural Supports for Highway Signs, Luminaries, and Traffic Signals."

OUTCOMES:

Upon completion of the course, participants will be able to:

- List and identify common visible weld defects
- Identify appropriate nondestructive testing techniques
- Identify factors that lead to corrosion and explain mitigation methods used in ancillary structures
- Define the severity of observed defects in accordance with the FHWA guidelines
- Identify defects in base/anchor rod installations
- List key issues in construction inspection of ancillary structures
- Identify repair techniques and discuss their use

TARGET AUDIENCE:

Structural engineers, material engineers, traffic engineers, field inspectors, construction supervisors, maintenance personnel, and other technical personnel involved in the installation, inspection, maintenance, and repair of ancillary highway structures. This course is not a design course; however, the information should be helpful to those working in design and specification of ancillary structures.

FEE: $270 Per Participant

LENGTH: 2.0 Days (CEU: 1.2 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Tom Everett • (202) 366-4675 • thomas.everett@fhwa.dot.gov

If you're interested in this course, you may also want to take advantage of other NHI structures courses.

132012 Soil and Foundations Workshop – Geotechnical and Materials
132014 Drilled Shafts
132021 Driven Pile Foundations – Design and Construction
132040 Geotechnical Aspects of Pavements – Geotechnical and Materials
132042 Design of MSEW and RSS
132078 Micropile Design and Construction

COURSE NUMBER: FHWA-NHI-130088
COURSE TITLE: Bridge Construction Inspection

NEW COURSE

The Bridge Construction Inspection Course (BCIC) is one of the core curriculum initiatives cited by AASHTO, FHWA, and the five regional organizations. These core curriculum initiatives are being pursued in order to maximize regional, public, and industry resources in the development of core training and qualification-based certification programs, improve the quality of bridge construction, and promote uniformity in training content and qualification requirements.

Overall, the BCIC improves quality, ensures uniformity, and establishes minimum competencies for bridge construction inspection. The underlying themes of the course can be broken down into key segments. The BCIC will provide the construction inspector with:

1. The requisite knowledge of construction that will make him/her an effective inspector
2. An overall awareness of the problems and consequences that can arise during construction and how these factors will impact the safety and service life of the structure
3. A knowledge of the inspections that should be performed to confirm conformance to the contract documents, or document contract nonconformance

OUTCOMES:

Upon completion of the course, participants will be able to:

- Explain the role of the construction inspector as part of the overall project team
- Interpret drawings and specifications
- Anticipate possible construction and materials problems
- Maintain bridge controls for location and elevation
- Describe construction sequence for various bridge systems (e.g. foundations, substructures, superstructures, and miscellaneous systems), bridge types and materials
- Conduct regular systematic inspections of materials and standards of construction, through the use of job aids, such as checklists
- Explain and perform basic inspection and testing of materials
- Perform accurate surveys and checking of dimensions
- Make and maintain sufficient records

TARGET AUDIENCE:

Construction supervisors, transportation department field inspectors, field engineers, resident engineers, structural engineers, materials engineers, and other technical personnel involved in the construction inspection of bridges. The course is developed for participants without an indepth engineering background. However, more knowledgeable persons can attend and will add to the overall effectiveness of the training through their active participation.

FEE: $600 Per Participant

LENGTH: 4.5 Days (CEU: 2.7 Units)

CLASS SIZE: Minimum: 20; Maximum: 30

NHI Training Program Manager: Larry Jones • (703) 235-0523 • larry.jones@fhwa.dot.gov
Technical Information: Benjamin Tang • (202) 366-4592 • benjamin.tang@fhwa.dot.gov

Do you have a suggestion for a new training course? Please complete the new training course request card in the back of the catalog.